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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/591,266

06/09/2000

Robert B. Ogle Jr.

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08/03/2009

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EXAMINER

CHEN, JACK S J

ART UNIT

PAPER NUMBER

2893

MAIL DATE

DELIVERY MODE

08/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/591,266	Applicant(s) OGLE JR. ET AL.	
	Examiner Jack Chen	Art Unit 2893	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Kauffman et al., U.S./5,780,891.

Re claim 1, Kauffman et al. disclose a flash memory device, which comprises [The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and *does not exclude additional, unrecited elements*] a substrate 10 (fig. 3; col. 3, lines 45-47); a plurality of core stacks (i.e., figs. 6-8), wherein each core stack comprises a tunnel oxide layer 12 on the substrate (fig. 3; col. 3, lines 50-55); a first polysilicon layer 18 (fig. 3; col. 3, line 55) on the tunnel oxide layer; an anti-reflective interpoly layer 22/20 (the dielectric 22 taken with 20 is considered as the anti-reflective interpoly layer, i.e., the anti-reflective interpoly dielectric is consisting of layers 22 and 20) (fig. 3 and col. 4, lines 1-5 and col. 2; i.e., silicon oxynitride is the anti-reflective material, this is the intrinsic properties of the material) atop and in contact with the first polysilicon layer; inherently shows the anti-reflective interpoly layer having an index of refraction n (intrinsic properties of the material) and a thickness d (i.e., the physical thickness as shown in the fig. 3) and a transmissive second polysilicon layer 26 (fig. 5 and col. 4, lines 27-50) on the anti-reflective interpoly layer; a plurality of source regions 36 (fig. 6) adjacent to the plurality of core

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stacks; and a plurality of drain regions 38 (fig. 6) adjacent to the plurality of core stacks, see figs. 1-8 and cols. 1-6 for more details.

Re claim 5, wherein at least a portion of the anti-reflective interpoly layer is made of silicon oxynitride (SiON), see fig. 3 and col. 4, lines 1-5 and col. 2.

Re claims 6, wherein the thickness of the antireflective interpoly layer (i.e, layer 20 having a thickness of about 130 angstroms and layer 22 having thickness of about 170 angstroms) is about 300 angstroms, see col. 3, line 60 to col. 4, lines 1-5.

In regards to claims 2-4 and 7, the process limitation of how the source and drain regions; the refraction index and thickness are formed/configured has no patentable weight in claim drawn to structure. Note that a product by process claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and In re Marosi et al, 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a product by process claim, and not the patentability of the process, and that an old or obvious product by a new method is not patentable as a product, whether claimed in product by process claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear.

Therefore, the recited phrases in claims 2-4 and 7 are thus non-limiting.

3. Claims 1-5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Gardner et al., US/5,888,870.

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Re claim 1, Gardner disclose a flash memory device, which comprises a substrate 30 (fig. 12); at least one core stack (fig. 12), wherein the at least one core stack comprises a tunnel oxide layer 34 on the substrate (fig. 12); a first polysilicon layer 36 (fig. 12) on the tunnel oxide layer; an anti-reflective interpoly layer 42 (figs. 12 and 6a; col. 6, lines 53-61; i.e., silicon oxynitride is the anti-reflective material, this is the intrinsic properties of the material) atop and in contact with the first polysilicon layer (figs. 6a and 12), said anti-reflective interpoly layer having an index of refraction n (this is the intrinsic properties of the material) and a thickness d (i.e., the physical thickness); and a transmissive second polysilicon layer 46 (fig. 12) on the anti-reflective interpoly layer; at least one source regions 54 (fig. 12) adjacent to the at least one core stack; and at least one drain regions 56 (fig. 12) adjacent to the at least one core stack (fig. 12), see figs. 1-12 and cols. 1-8 for more details.

Re claim 5, wherein the anti-reflective interpoly layer is made of silicon oxynitride (SiON), see fig. 6a and col. 6, lines 53-62.

In regards to claims 2-4 and 7, the process limitation of how the source and drain regions; the refraction index and thickness are formed/configured has no patentable weight in claim drawn to structure. Note that a product by process claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and In re Marosi et al, 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a product by process claim, and not the patentability of the process, and that an old or obvious product by a new method is not patentable as a

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product, whether claimed in product by process claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear.

Therefore, the recited phrases in claims 2-4 and 7 are thus non-limiting.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al., US/5,888,870.

Gardner et al. disclosed in above, noting that figs. 1-12 and cols. 1-8 and col. 6, lines 53-62 disclose the silicon oxynitride having thickness of about 200 angstroms. However, Gardner et al. does not show the silicon oxynitride having thickness of about 300 to 400 angstroms.

The thickness range of claims 6 and 9 are considered to involve routine optimization while has been held to be within the level of ordinary skill in the art. As noted in In re Aller, the

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selection of reaction parameters such as temperature and concentration would have been obvious:

“Normally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification. Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely degree from the results of the prior art...such ranges are termed Acritical ranges and the applicant has the burden of proving such criticality.... More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.”

In re Aller 105 USPQ233, 255 (CCPA 1955). See also *In re Waite* 77 USPQ 586 (CCPA 1948); *In re Scherl* 70 USPQ 204 (CCPA 1946); *In re Irmischer* 66 USPQ 314 (CCPA 1945); *In re Norman* 66 USPQ 308 (CCPA 1945); *In re Swenson* 56 USPQ 372 (CCPA 1942); *In re Sola* 25 USPQ 433 (CCPA 1935); *In re Dreyfus* 24 USPQ 52 (CCPA 1934).

Therefore, one of ordinary skill in the requisite art at the time the invention was made would have used any thickness range suitable to the device of Gardner in order to optimize the process (i.e., providing the desired isolating properties, etc.).

Response to Arguments

7. Applicant's arguments filed 4/13/09 have been fully considered but they are not persuasive reasons herein above.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Chen whose telephone number is (571)272-1689. The examiner can normally be reached on Monday-Friday (8:00am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Davienne N. Monbleau can be reached on (571)272-1945. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Primary Examiner
Art Unit 2893

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